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—the war industry—that presents itself on the other side of the water. . . . Now, there are two ways of dealing with a problem of this kind. One way is by the hearty cooperation of the men already engaged in the industry. The other way is by compulsion. My experience in the Interstate Commerce Commission led me to believe that the larger men in the railroad industry had quite as much vision as I had, and if I could show them the importance of an occasion they would try to meet it. So, instead of resorting to compulsion, instead of taking over mines and great operating plants we are endeavoring to put you men at your best. This war is a challenge to us.

The chairman of the committee writes:

Notwithstanding the increased production of coal from practically every district, the increasing requirements to meet the needs of all classes of industry, as well as for the comfort and welfare of the people and the transportation of troops, munitions, food and other products, together with the supplying of our allies, and for our national protection—all these demands are liable to surpass the capacity of our mines unless the full cooperation of the mining, transporting and distributing agents of this country is secured. This emergency requires not only the development of the highest efficiency, especially on account of a diminished supply of labor used in the production of coal, but also in more comprehensive methods of cooperation by the coal producers with the transporting and distributing agencies, so that not only a full production will be secured, but also that this production finds its way over our railroads into those centers where the most urgent need exists. If the demand for this product continues to increase it may be necessary that active steps be taken to so far as possible confine the distribution and use of it to those activities which are more nearly vital to the welfare and protection of the nation. That this may not effect an unnecessary hardship upon the domestic welfare of our people it is necessary to promote the closest cooperation, and because of the duty laid upon us to promote this welfare we urge upon you that you cooperate with this committee in its efforts to promote the largest production, the most equitable distribution and the highest use to produce the best economic results. No doubt an emergency exists, but it is the belief of this committee that with your hearty support and the assistance of the public in conserving supply, sufficient fuel can be had to meet public necessity.

#### FOOD EXHIBITS AT THE AMERICAN MUSEUM OF NATURAL HISTORY

MANY foods, hitherto not eaten by the people of the United States, or which have only a limited vogue, are shown at the Food Values and Economies Exhibition opened on May 23 in the American Museum of Natural History.

An especially interesting feature of the exhibition is the division devoted to unutilized seashore foods, such as filet of shark, gray fish, mussels, skate, many kinds of edible seaweeds and periwinkles. The history and usefulness of the king of American cereals—corn—is graphically demonstrated. There are numerous products of corn and also cornmeal dishes and preparations.

The values by calories of portions in the popular restaurants are visualized and there are specimen meals suitable for serving in the home. How the population fares in lands beyond the sea will be shown by samples of war bread and of the rations prescribed by European food dictators. The housewife may also obtain from this exhibition many practical suggestions as to how to stop the leaks and to promote table economy. Several hotels of the city are to exhibit new dishes specially adapted for the conditions of the present day and from them many helpful hints may be obtained by the general public.

The exhibition will be open for about one month. It was introduced by a special meeting devoted to conservation for war, held in the auditorium of the museum on Wednesday. According to the program the president of the institution, Dr. Henry Fairfield Osborn, presided and addresses were to be delivered by Mr. George W. Perkins, chairman of the Mayor's Food Commission; Dr. Graham Lusk, professor of physiology, Medical College of Cornell University; Dr. Hermann N. Biggs, New York State commissioner of health; and Dr. Walter B. James, president, New York Academy of Medicine.

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#### SCIENTIFIC NOTES AND NEWS

DR. CHARLES R. CROSS, Thayer professor of physics at the Massachusetts Institute of Technology, will become professor emeritus at the

end of the present year. Dr. Cross has been professor of physics at the institute since 1875.

At a testimonial dinner given by the Philadelphia County Medical Society to Dr. James Tyson on his retirement after fifty-four years of practise on May 11, Dr. Hobart A. Hare was toastmaster and addresses were made by the following speakers: Dr. Henry D. Jump, president of the Philadelphia County Medical Society; Dr. Abraham Jacobi; Dr. William H. Welch; Dr. James W. Holland, and Dr. Edward Martin.

DR. T. BRAILSFORD ROBERTSON, professor of biochemistry and pharmacology in the University of California, has donated to the regents of the University of California his patents for the growth-controlling substance tethelin which he has succeeded in isolating from the anterior lobe of the pituitary body and which has been employed to accelerate repair in slowly healing wounds. The proceeds which may accrue from the sale or lease of these patents are to constitute a fund which will be entitled "The University of California Foundation for International Medical Research" and which will be expended in the furtherance of medical research, preferably in the physiology, chemistry and pathology of growth.

THE Société de Géographie has awarded its highest prize, the Conrad Malte-Brun Gold Medal to Dr. John H. Finley, president of the University of the State of New York, in recognition of "the exceptional interest and high merit of his volume, 'The French in the Heart of America.'" The Commission de Géographie of Quebec, with the approval of the Minister of Lands and Forests, has named a new township in Gaspé, P. Q., in honor of Dr. John M. Clarke, state geologist of New York in recognition of his scientific writings on Gaspé and especially of his book "The Heart of Gaspé."

PROFESSOR WM. BULLOCK CLARK, of the Johns Hopkins University, has been appointed by the governor of Maryland a member of the State Defense Council.

THE executive committee of the Entomological Society of America has commemorated the appearance of the fourth and final volume

of the Carnegie mosquito monograph by electing Frederick Knab a fellow of the society.

THE Institute of Chemistry, London, has presented a silver bowl to Mr. R. B. Pilcher, registrar and secretary, in appreciation of his twenty-five years' service.

A COMMITTEE on research to cooperate with the National Research Council has been appointed at Washington University, consisting of members of the corporation, St. Louis alumni and faculty as follows: B. M. Duggar (chairman), J. Erlanger, E. Flad, W. W. Horner, A. S. Langsdorf, E. Mallinckrodt, R. McCulloch, L. McMaster, G. T. Moore, E. L. Opie, L. Pyle, P. A. Shaffer and J. L. Van Ornum.

A RESEARCH committee has been appointed at Iowa State College at the suggestion of the National Research Council. The committee is representative of the various interests of the college and is made up as follows: P. E. Brown, professor of soil bacteriology, chairman, J. M. Evvard, associate professor of animal husbandry, L. H. Pammel, professor of botany, L. B. Spinney, professor of physics, Helen Monsch, associate professor of domestic science, Chas. Murray, associate professor of veterinary pathology and bacteriology.

A FIRM of geologists has been organized in Tulsa, Oklahoma, for consulting work, consisting of Messrs. J. B. Newby, R. E. Garrett, J. R. Crabtree and A. P. Wright.

CHARLES FULLER BAKER, professor of agronomy in the college of agriculture of the University of the Philippines, has been given a year's leave of absence, to accept under temporary appointment, the post of assistant director of the Botanical Gardens at Singapore, in charge of experimental work in tropical agronomy.

B. R. LEACH, of the Bureau of Entomology, who has been in Washington preparing manuscript and notes on the results of his investigations of the woolly apple aphid, has returned to his permanent headquarters at Winchester, Va., to resume his field duties in connection with apple insect investigations.

FRANK R. COLE, scientific assistant in the Bureau of Entomology, formerly located at Washington, D. C., has been detailed to Hood River, Ore., to investigate insects injurious to strawberries and other truck crops in cooperation with the Oregon Agricultural Experiment Station at Corvallis.

DR. L. H. PENNINGTON, of the college of forestry of Syracuse University, has been put in charge of the white-pine blister rust survey for the State of Michigan, as the representative of the Bureau of Plant Industry. His headquarters, when not in the field, are at the department of botany, Michigan Agricultural College, East Lansing, Mich.

THOMAS CLACHAR BROWN has resigned his position as associate professor of geology at Bryn Mawr College and has taken up work in agriculture. He may be addressed at Laurel Bank Farm, Fitchburg, Mass.

PROFESSOR EDWARD ORTON, JR., for many years dean of the college of engineering of Ohio State University, and at present research professor in ceramic engineering, has obtained indefinite leave of absence from the university. He has been commissioned as a major in the Quartermasters Corps, Officers Reserve Corps, United States Army, and has been ordered to report for duty to Fort Sam Houston, Texas.

DR. BERTRAM G. SMITH, associate professor of zoology at the Michigan State Normal College, Ypsilanti, has obtained leave of absence to enlist in the Reserve Officers' Training Corps, and is now stationed at Fort Sheridan, Ill. Mr. A. G. Papworth, of the University of Michigan, is taking charge of Dr. Smith's work at the Normal College.

AT its last meeting on May 9, 1917, the Rumford Committee of the American Academy of Arts and Sciences made the following appropriations:

To Professor Frederic Palmer, Jr., in aid of his research on light of very short wave-lengths (in addition to former appropriations), \$100.

To Mr. David L. Webster for the salary of an assistant in connection with his research on the intensity of lines in X-ray spectra, \$100.

To Professor B. J. Spence in aid of his research upon a new Color Identity Pyrometer, \$75.

To Professor B. J. Spence in aid of his research upon a new and more sensitive form of radiometer, \$150.

To Professor R. C. Gibbs in aid of his investigations on the absorption of organic and other solutions for ultra-violet, visible and infra-red rays, \$500.

To Professor W. M. Baldwin in aid of his research on the character of chemical substances necessary to sensitize animal tissues to the influence of X-rays, \$125.

THE North Carolina Academy of Science at its recent meeting elected as officers for the ensuing year:

*President*, Professor W. A. Withers, Agricultural and Engineering College, West Raleigh.

*Vice-president*, Dr. J. H. Pratt, State Geologist, Chapel Hill.

*Secretary-Treasurer* (tenth year), Professor E. W. Gudger, State Normal College, Greensboro.

*Additional Members of the Executive Committee*, Mr. Bert Cunningham, High School, Durham; Mr. H. R. Totten, University of North Carolina, Chapel Hill; Professor H. C. Beardslee, Asheville School, Asheville.

DR. JULIUS STIEGLITZ, chairman of the department of chemistry of the University of Chicago, lectured before the Nebraska Section of the American Chemical Society on the morning of April 28 and before the Nebraska Chapter of Sigma Xi on same evening. The subject of his morning lecture was "The Electron Theory of Positive and Negative Valences" and of the evening lecture "Combustion or the Electrical Theory of Oxidation."

DR. J. McKEEN CATTELL gave an address on May 19 before the Twentieth Century Club at Boston on "Free speech in the university."

THE annual public botanical address, under the auspices of the Botanical Seminar of Michigan Agricultural College, was delivered on May 15, by Dr. L. H. Pennington, of Syracuse University, his topic being "White-pine blister rust."

By the death of Samuel Alexander at his home in Detroit on May 15 is lost one of the old time amateur botanists, that is, a man

who worked in botany because of his ardent love of plants. Mr. Alexander was nearly eighty years old at the time of his death, but still kept up his studies in spite of illness that limited his active collecting for the past three years. For the last ten years his chief studies were on the perennial sunflowers, of which he found great numbers of forms and of which he hoped to be able to publish a monograph. He was at one time city forester for Detroit and furthered the planting and care of trees in that city at a time when there were but few voices advocating such things. He entered the Michigan Agricultural College in the early spring of 1861 but left in a few days as the first volunteer from that institution for the war.

WE learn from *Nature* that Major A. C. B. Geddes, who had begun work in natural science has been killed in the war at the age of twenty-five years. He was the eldest son of Professor Patrick Geddes.

THE death is announced of S. Tolver Preston, known for his writings on cosmical physics.

M. HENRI BAZIN, distinguished for his work on hydraulics, has died at the age of eighty-eight years.

THE sixteenth biennial Dutch Congress of Natural and Medical Sciences was held at The Hague on April 12 and following days. We learn from *Nature* that in connection with this, the geography section had organized an interesting historical exhibition, mainly of the work of Mercator and the Dutch cartographers of the seventeenth century. The chief general lecture was delivered by Professor H. A. Lorentz, of Leyden, on "Einstein's Gravitational Theory and Fundamental Ideas in Physics." From a discussion, in one of the sections, on chemical industry in Holland, it appears that the manufacture of aniline and other intermediate materials for the dye industry was started in 1916.

THE next meeting of the American Association of Pathologists and Bacteriologists will be held at Minneapolis on March 29 and 30, 1918.

THE twelfth annual meeting of the American Association of Museums was held in New York City from May 21 to 23, inclusive. The association consists of directors and curators of leading American institutions. The sessions on Monday and Wednesday were at the American Museum of Natural History. Those on Tuesday were at the Metropolitan Museum of Art and on Tuesday evening there was an inspection of the New York Aquarium and an informal smoker. On Thursday the delegates visited the Central Museum of the Brooklyn Institute of Arts and Sciences and the Children's Museum of the Brooklyn Institute. On Friday they inspected the New York Botanical Gardens. Trips were also arranged to the Public Museum of the Staten Island Association of Arts and Sciences and to the Newark Museum. An especially interesting phase of the sessions was the report of the committee on training for museum workers, which was devoted to finding ways and means of increasing the practical usefulness of museums.

*The Electrical World* states that as a result of the present war conditions the Manitoba branch of the American Society of Civil Engineers has organized a scientific and industrial research committee to organize and develop the natural resources in industry and science. At present this committee is listing all available research laboratories in its jurisdiction, also all men engaged in scientific and engineering pursuits and the qualifications of each man in his particular line of research or engineering. After organization is completed a study will be made of the requirements of the Province of Manitoba as regards manufactured articles, and more especially imports, with a view to supply all local demand for such material and, if possible, to provide for export, if it can be economically accomplished.

THE trustees of Purdue University have approved the organization of an engineering experiment station. This station will be employed for the supervision of engineering research. Arrangements have also been made for the extension and equipment of a high-

voltage laboratory, in which pressures as high as 500 kv. can be obtained.

### UNIVERSITY AND EDUCATIONAL NEWS

STEPS have been taken to insure the erection of a new building for the Indiana University School of Medicine on a site near the Robert W. Long Hospital, Indianapolis.

PROFESSOR ROBERT M. YERKES, of Harvard University, has been appointed head of the department of psychology at the University of Minnesota.

At the Johns Hopkins University, Professor Edward W. Berry, associate professor of paleontology, has been advanced to be professor of paleontology, and Associate J. T. Singewald, Jr., to be associate professor of economic geology.

At the Massachusetts Institute of Technology, Dr. Charles L. Norton has been appointed professor of industrial physics. Promotions from instructor to assistant professor have been made as follows: Mathematics, Joseph Lipka and Frank B. Hitchcock; physics, Herbert P. Holnagel; drawing, Arthur L. Goodrich.

DR. H. H. NEWMAN, dean of the college of science of the University of Chicago (medical and premedical students), has been promoted from an associate professorship in zoology to a professorship in that department.

In the botanical department of the Michigan Agricultural College Dr. G. H. Coons has been promoted to associate professor, and Dr. E. F. Woodcock to assistant professor. Beginning with July 1, Mr. Ezra Levin, at present instructor in botany at the Kalamazoo High School, takes up his work as extension agent in plant diseases, for half his time, and assistant pathologist in the Experiment Station for the other half.

DR. PIERRE MARIE has been appointed to the chair of clinical neurology in the University of Paris in succession to the late Professor Dejerine.

FRÄULEIN A. M. CURTIUS has been appointed lecturer in French at Leipzig. She is said to

be the first woman on the staff of a German university.

### DISCUSSION AND CORRESPONDENCE SURFACE TENSION, CAPILLARITY AND PETROLEUM POOLS

WHILE surface tension and capillarity<sup>1</sup> are being discussed, the writer would like to raise the question of whether or not the material composing the tube makes any difference in the height to which the liquid rises.

It is surprising that it is not possible to settle this apparently elementary question at once by reference to any one of a score of good treatises on physics; physics is an old science, the subject of intermolecular attraction is fundamental, capillarity is discussed at length and the deductions carry conviction born of impressive formulæ. As a matter of fact, statements bearing on the point in question seem inharmonious and many of them lack clearness. One of the most convincing that the writer has seen is that of Bigelow and Hunter,<sup>2</sup> who say: "We have demonstrated that capillary ascension of water (and benzene) is different in tubes of different substances," and they base the assertion on experimental evidence.

This declaration accords with the writer's<sup>3</sup> concepts concerning capillarity. Since he is not a physicist, these concepts should come from the conclusion of physicists concerning the point or at least from well-known and unquestioned principles of physics, but as a matter of fact they are based partly upon such conclusions and principles, partly upon several years of cogitation, and partly upon the

<sup>1</sup> Patrick, W. A., Ostwald's "Handbook of Colloidal Chemistry," SCIENCE, N. S., Vol. XLV., No. 1,143, pp. 750-751, November 24, 1916. Kimball, Arthur L., "Negative Surface Tension," SCIENCE, N. S., Vol. XLV., No. 1,152, p. 75, Jan. 26, 1917. Becker, Geo. F., "Propulsion by Surface Tension," SCIENCE, N. S., Vol. XLV., No. 1,153, p. 115, Feb. 2, 1917.

<sup>2</sup> Bigelow, S. L., and Hunter, F. W., "The Function of the Walls in Capillary Phenomena," *Jour. Phys. Chem.*, Vol. 15, p. 380, 1911.

<sup>3</sup> Shaw, E. W., "The Role and Fate of Connate Water in Oil and Gas Sands" (discussion), *Am. Inst. Min. Eng. Trans.*, Vol. 51, p. 601, 1916.